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### 1 [Techniques for obtaining high performance in Java programs](#)

[Iffat H. Kazi, Howard H. Chen, Berdenia Stanley, David J. Lilja](#)

 September 2000 **Computing Surveys (CSUR)**, Volume 32 Issue 3

**Publisher:** ACM [Request Permissions](#)

 Full text available: [Pdf](#) (816.13 KB)

 Additional Information: [full citation](#), [abstract](#)
**Bibliometrics:** Downloads (6 Weeks): 77, Downloads (12 Months): 487, Downloads

This survey describes research directions in techniques to improve the performance of Java programming language. The standard technique for Java execution is to compile Java code to native code, which is then executed on a native processor. This technique is not portable, as it requires the presence of a native processor. The standard technique for Java execution is to compile Java code to native code, which is then executed on a native processor. This technique is not portable, as it requires the presence of a native processor.

**Keywords:** Java, Java virtual machine, bytecode-to-source translators, interpreters, just-in-time compilers

### 2 [Immutability specification and its applications](#)

[Igor Pechtchanski, Vivek Sarkar](#)

 November 2002 **JGI '02: Proceedings of the 2002 joint ACM-ISCOPE conference**
**Publisher:** ACM

 Full text available: [Pdf](#) (203.07 KB)

 Additional Information: [full citation](#), [abstract](#)
**Bibliometrics:** Downloads (6 Weeks): 0, Downloads (12 Months): 17, Downloads

A location is said to be *immutable* if its value and the values of selected fields are guaranteed to remain unchanged during a specified time interval. We introduce a new *specification*, and ...

**Keywords:** annotations, immutability, optimization

### 3 [TotalProf: a fast and accurate retargetable source code profiler](#)

[Lei Gao, Jia Huang, Jianjiang Ceng, Rainer Leupers, Gerd Ascheid, Heinrich Müller](#)

 October 2009 **CODES+ ISSS '09: Proceedings of the 7th IEEE/ACM international conference on code design and system synthesis**
**Publisher:** ACM [Request Permissions](#)

 Full text available: [Pdf](#) (907.72 KB)

 Additional Information: [full citation](#), [abstract](#)
**Bibliometrics:** Downloads (6 Weeks): 13, Downloads (12 Months): 13, Downloads

Profilers play an important role in software/hardware design, optimization, and debugging.

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have been proposed to implement profilers. The most widespread approach is Instruction Set Simulation (ISS) ...

**Keywords:** architecture description language, instruction set simulation, profiling

#### 4 [A lazy developer approach: building a JVM with third party software](#)



[Nicolas Geoffray](#), [Gaël Thomas](#), [Charles Clément](#), [Bertil Folliot](#)

September 2008 **PPPJ '08**: Proceedings of the 6th international symposium on programming in Java

**Publisher:** ACM

Full text available: [Pdf](#) (737.39 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 6, Downloads (12 Months): 74, Downloads (all time): 100

The development of a complete Java Virtual Machine (JVM) implementation is a non-trivial task. It requires knowledge in different areas: garbage collection, just in time compilation, memory management, etc. The result is ...

**Keywords:** BoehmGC, GNU classpath, Java, JhJVM, LLVM

#### 5 [Survey of code-size reduction methods](#)



[Árpád Beszédés](#), [Rudolf Ferenc](#), [Tibor Gyimóthy](#), [André Dolenc](#), [Konsta Kar](#)

September 2003 **Computing Surveys (CSUR)**, Volume 35 Issue 3

**Publisher:** ACM [Request Permissions](#)

Full text available: [Pdf](#) (443.89 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 36, Downloads (12 Months): 266, Downloads (all time): 400

Program code compression is an emerging research activity that is having a significant impact on systems such as networking and embedded systems. This is because the reduction in network traffic and embedded ...

**Keywords:** code compaction, code compression, method assessment, program code compression

#### 6 [Statistically rigorous java performance evaluation](#)



[Andy Georges](#), [Dries Buytaert](#), [Lieven Eeckhout](#)

October 2007 **OOPSLA '07**: Proceedings of the 22nd annual ACM SIGPLAN conference on Object-Oriented Programming Systems and Applications

**Publisher:** ACM [Request Permissions](#)

Full text available: [Pdf](#) (1.63 MB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 23, Downloads (12 Months): 178, Downloads (all time): 250

Java performance is far from being trivial to benchmark because it is affected by many factors: the application, its input, the virtual machine, the garbage collector, the hardware, etc. The result is ...

**Keywords:** benchmarking, data analysis, java, methodology, statistics

Also published in:

October 2007 **SIGPLAN Notices** Volume 42 Issue 10

- 7 [Revisiting Out-of-SSA Translation for Correctness, Code Quality and](#)  
[Benoit Boissinot, Alain Darté, Fabrice Rastello, Benoit Dupont de Dinechin,](#)  
 March 2009 **CGO '09: Proceedings of the 2009 International Symposium on**  
**Publisher:** IEEE Computer Society

Full text available:  Pdf (287.20 KB)


Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 19, Downloads (12 Months): 80, Downloads (all time): 100

Static single assignment (SSA) form is an intermediate program representation. Many optimizations can be performed with fast and easy-to-implement algorithms. However, some optimizations create situations where the SSA variables ...

**Keywords:** SSA form, Compilers, JIT-compilation

- 8 [Optimizing JIT-compilation subsystem for Rotor 2.0](#)

 [Sophia Chilingarova](#)

October 2006 **OOPSLA '06: Companion to the 21st ACM SIGPLAN symposium on**  
 systems, languages, and applications

**Publisher:** ACM 

Full text available:  Pdf (184.57 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 6, Downloads (12 Months): 37, Downloads (all time): 100

The poster describes the design and implementation of the optimizing JIT (Rotor) 2.0 virtual machine. This presentation covers overall design of the fast algorithm for the 1st level ...

**Keywords:** CIL, CLI, JIT-compilation, Rotor, SSCLI, optimization

- 9 [Code generation for just-in-time compiled mobile collector agents](#)

[John G. Allen, Jesse S. Jin](#)

May 2003 **VIP '02: Selected papers from the 2002 Pan-Sydney workshop on**  
 Volume 22

**Publisher:** Australian Computer Society, Inc.

Full text available:  Pdf (38.50 KB)


Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 2, Downloads (12 Months): 13, Downloads (all time): 100

This paper describes MGEN/x86, a toolkit that simplifies the process of creating just-in-time (JIT) compilers for the x86 series of processor. MGEN produces code based on a user-defined sequence ...

**Keywords:** JIT, assembly, collector, compiler, mobile, x86

- 10 [Attacking the semantic gap between application programming languages and](#)

 [Greg Snider, Barry Shackelford, Richard J. Carter](#)

February 2001 **FPGA '01: Proceedings of the 2001 ACM/ SIGDA ninth international conference on**  
 programmable gate arrays

**Publisher:** ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (258.65 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 10, Downloads (12 Months): 50, Downloads (24 Months): 10

It is difficult to exploit the massive, fine-grained parallelism of configuring application programming language such as C, Pascal or Java. The difficulty of the synchronous, concurrent processing ...

#### 11 [LLVA: A Low-level Virtual Instruction Set Architecture](#)

[Vikram Adve](#), [Chris Lattner](#), [Michael Brukman](#), [Anand Shukla](#), [Brian Gaeke](#)  
December 2003 **MICRO 36**: Proceedings of the 36th annual IEEE/ACM International Symposium on Microarchitecture

**Publisher:** IEEE Computer Society


Full text available:  [Pdf](#) (196.08 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 2, Downloads (12 Months): 32, Downloads (24 Months): 10


A virtual instruction set architecture (V-ISA) implemented via a processor provides great flexibility to processor designers. Recent examples such as existing hardware instruction ...

#### 12 [Wavelet synopsis for data streams: minimizing non-euclidean error](#)

 [Sudipto Guha](#), [Boulos Harb](#)

August 2005 **KDD '05**: Proceedings of the eleventh ACM SIGKDD international conference on Knowledge discovery in data mining

**Publisher:** ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (303.82 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 9, Downloads (12 Months): 80, Downloads (24 Months): 10


We consider the wavelet synopsis construction problem for data stream estimation. We estimate the data by constructing a synopsis, whose size, say B is much smaller than the data size, chosen to minimize a suitable error between ...

**Keywords:** streaming algorithm, wavelet synopses

#### 13 [Design of the Java HotSpot™ client compiler for Java 6](#)

 [Thomas Kotzmann](#), [Christian Wimmer](#), [Hanspeter Mössenböck](#), [Thomas Rossbach](#)  
May 2008 **Transactions on Architecture and Code Optimization (TACO)**

**Publisher:** ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (1.14 MB)

Additional Information: [full citation](#), [abstract](#)


**Bibliometrics:** Downloads (6 Weeks): 40, Downloads (12 Months): 433, Downloads (24 Months): 10

Version 6 of Sun Microsystems' Java HotSpot™ VM ships with a redesigned client compiler that includes several research results of the last years. The client compiler configuration used by default ...

**Keywords:** Java, compiler, deoptimization, intermediate representation, register allocation


Application of a multi-criteria simulation optimization based DSSA. Azadeh, S. F. Ghaderi, A. Dabbaghi, M. Dehghanbaghi

July 2007

**SCSC**: Proceedings of the 2007 summer computer simulation**Publisher**: Society for Computer Simulation InternationalFull text available:  Pdf (209.58 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics**: Downloads (6 Weeks): 4, Downloads (12 Months): 43, Downloads

In this study we propose a decision support system for a textile dyeing, proposed simulation model itself, enables managers to find a schedule (combination of decision parameters) ...

**Keywords**: goal programming, metamodel, multi-criteria decision making, quantitative factors

**15** QVM: an efficient runtime for detecting defects in deployed systems Matthew Arnold, Martin Vechev, Eran Yahav

October 2008

**OOPSLA '08**: Proceedings of the 23rd ACM SIGPLAN conference on programming languages and applications**Publisher**: ACM  [Request Permissions](#)Full text available:  Pdf (917.15 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics**: Downloads (6 Weeks): 27, Downloads (12 Months): 246, Downloads

Coping with software defects that occur in the post-deployment stage is only when the system uses a specific configuration and only under certain production systems until the ...

**Keywords**: algorithms, reliability, virtual machines


Also published in:

October 2008 **SIGPLAN Notices** Volume 43 Issue 10**16** FlightTracker: A Novel Optical/Inertial Tracker for Cockpit EnhancedEric Foxlin, Yury Altshuler, Leonid Naimark, Mike Harrington

November 2004

**ISMAR '04**: Proceedings of the 3rd IEEE/ACM International Symposium on Mixed and Augmented Reality**Publisher**: IEEE Computer SocietyFull text available:  Pdf (410.78 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics**: Downloads (6 Weeks): 10, Downloads (12 Months): 69, Downloads

One of the earliest fielded augmented reality applications was enhanced projected on the pilot's visor provides geo-spatially registered information about obstacles, maintain situational awareness ...

**17** A novel approach for flexible and consistent ADL-driven ASIP design Gunnar Braun, Achim Nohi, Weihua Sheng, Jianjiang Ceng, Manuel Hohensee, Leupers, Heinrich Meyr

June 2004


**DAC '04**: Proceedings of the 41st annual Design Automation Conference**Publisher**: ACM  [Request Permissions](#)Full text available:  Pdf (204.60 KB)Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 7, Downloads (12 Months): 33, Download

Architecture description languages (ADL) have been established to aid t instruction-set processors (ASIP). Their main contribution is the automa including C compiler, assembler, linker, ...

**Keywords:** ADL, ASIP, embedded processors

#### 18 [Scratch-pad memory allocation without compiler support for java app](#)

 Nghi Nguyen, Angel Dominguez, Rajeev Barua

September 2007 **CASES '07:** Proceedings of the 2007 international confere synthesis for embedded systems

**Publisher:** ACM

Full text available:  Pdf (323.73 KB)

Additional Information: [full citation](#), [abstra](#)

**Bibliometrics:** Downloads (6 Weeks): 7, Downloads (12 Months): 73, Downloa

This paper presents the first scratch-pad memory allocation scheme tha interpreted-language based applications. A scratch-pad memory(SPM) i: replaces the hardware-managed cache. Its ...

**Keywords:** JIT, JVM, compiler, embedded systems, java, memory alloc

#### 19 [LLVM: A Compilation Framework for Lifelong Program Analysis & Tr](#)

[Chris Lattner](#), [Vikram Adve](#)

March 2004 **CGO '04:** Proceedings of the international symposium on Cod directed and runtime optimization

**Publisher:** IEEE Computer Society


Full text available:  Pdf (256.90 KB)

Additional Information: [full citation](#), [abstra](#)

**Bibliometrics:** Downloads (6 Weeks): 32, Downloads (12 Months): 190, Downl

This paper describes LLVM (Low Level Virtual Machine),a compiler frame lifelongprogram analysis and transformation for arbitrary programs,by p compilertransformations at compile-time, ...

#### 20 [Concurrent GC leveraging transactional memory](#)

 Phil McGachey, Ali-Reza Adl-Tabatabai, Richard L. Hudson, Vijay Menon, Br

February 2008 **PPoPP '08:** Proceedings of the 13th ACM SIGPLAN Symposi programming

**Publisher:** ACM  [Request Permissions](#)

Full text available:  Pdf (470.71 KB)

Additional Information: [full citation](#), [abstra](#)




**Bibliometrics:** Downloads (6 Weeks): 2, Downloads (12 Months): 101, Downlo

We predict that the ever-growing number of cores on our desktops will programming. Two technologies are likely to become mainstream in res superior programming model to traditional ...

**Keywords:** compiler optimizations, concurrent garbage collection, stor transactional memory, virtual machines

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